**In the Claims:**

**We Claim:**

1. A method of forming at least one layer, the method comprising:

providing at least one optical element having a central axis;

rotating said at least one optical element about said central axis; and

forming the at least one layer with a substantially uniform thickness during said rotation.

2. A method as recited in claim 1, wherein said at least one optical element is at least one optical fiber.

3. A method as recited in claim 2, wherein said at least one optical fiber is a fiber Bragg grating (FBG).

4. A method as recited in claim 1, wherein said at least one layer is chosen from the group consisting essentially of: metal, metal-alloys, non-metals, dielectrics, semiconductors, and piezoelectric materials.

5. A method as recited in claim 1, wherein one of said at least one layer is an adhesion layer.

Sub A3

6. A method as recited in claim 5, wherein said adhesion layer is chosen from the group consisting essentially of: Cr, $Cr_2$, $O_3$, $Al_2O_3$, Ti, and $Si_3N_4$.

7. A method as recited in claim 4, wherein said metals and said metal-alloys include Pt, Au and Ni:Cr.

8. A method as recited in claim 4, wherein said piezoelectric materials include ZnO, AlN, PZT, PLZT and $LiNbO_3$.

9. A method as recited in claim 1, wherein said substantially uniform thickness has radially uniformity in the range of approximately 95% to approximately 99%.

10. A method as recited in claim 1, wherein said substantially uniform thickness is in the range of approximately $1\mu m$ to approximately $100\mu m$.

11. A method as recited in claim 3, wherein said FBG exhibits an average polarization mode dispersion of approximately 1picosecond over a wavelength range of approximately 1552.5 nm to approximately 1554.3 nm.

12. A method as recited in claim 1, wherein said forming further includes depositing the at least one layer by physical vapor deposition.

13. A method as recited in claim 1, wherein said forming further comprises depositing the at least one layer by electron-beam deposition.

14. An optical element, comprising:

an at least one layer having a substantially radially uniform thickness disposed about the optical element.

15. An optical element as recited in claim 14, wherein said optical element is an optical fiber.

16. An optical element as recited in claim 14, wherein said at least one layer is chosen from the group consisting essentially of: metals, metal-alloys, non-metals, dielectrics, semiconductors, and piezoelectric materials.

17. An optical element as recited in claim 14, wherein one of said at least one layers is an adhesion layer.

Sub A4

18. An optical element as recited in claim 17, wherein said adhesion layer is ~~chosen from the group consisting~~ essentially of: Cr, $Cr_2$, $O_3$, $Al_2O_3$, Ti, and $Si_3N_4$.

19. An optical element as recited in claim 16, wherein said metals and metal-alloys include: Pt, Au and Ni:Cr.

20. An optical element as recited in claim 16, wherein said piezoelectric materials include: ZnO, AlN, PZT, PLZT and $LiNbO_3$.

21. An optical element as recited in claim 14, wherein said substantially uniform thickness has radial uniformity in the range of approximately 95% to approximately 99%.

22. An optical element as recited in claim 1, wherein said thickness is in the range of approximately $1\mu m$ to approximately $100\mu m$.

23. An optical element as recited in claim 15, wherein said optical fiber is a fiber Bragg grating.

24. An apparatus, comprising:
rotation mechanism which rotates an optical element; and
a device which forms a coating of a substantially uniform thickness over said optical element during said rotation of said optical fiber.

25. An apparatus as recited in claim 24, wherein said rotation mechanism rotates said optical element about a central axis thereof.

26. An apparatus as recited in claim 24, wherein said optical element is an optical fiber.

27. An apparatus as recited in claim 24, wherein said optical fiber is a fiber Bragg grating (FBG).

28. An apparatus as recited in claim 24, wherein the apparatus further comprises a

plurality of said rotation mechanisms, each of which rotate at least one of said optical elements.

29. An apparatus as recited in claim 24, wherein each of said rotational mechanisms is disposed in a respective opening in a carrier.

30. An apparatus as recited in claim 29, wherein said carrier moves translationally beneath said device.

31. An apparatus as recited in claim 24, wherein said device is physical vapor deposition device.

32. An apparatus as recited in claim 24, wherein said device is an electron beam deposition device.

33. An apparatus as recited in claim 28, wherein said optical element is an optical fiber.

34. An apparatus as recited in claim 33, wherein said optical fiber is a fiber Bragg grating (FBG).

35. An apparatus as recited in claim 24, wherein said thickness has a radially uniformity of approximately 95% to approximately 99%.